

REMARKS

Applicants respectfully request reconsideration. Claims 1-9 and 16-18 were previously pending in this application. Claim 1 has been amended. Claim 6 has been canceled. New claims 19 and 20 have been added. As a result, claims 1-8 and 16-20 are pending for examination with claims 1 and 18 being independent claims. No new matter has been added.

Rejections Under 35 U.S.C. §102

Claims 1, 2, 3 and 5 stand rejected under 35 U.S.C. §102(b) as being anticipated by Yamada (U.S. Patent No. 5,800,631). As described in a previous response, Yamada describes a solar cell module with improved reliability, having a structure that includes a photovoltaic element interposed between front and back side covering materials.

Applicants have amended independent claim 1 to include the subject matter of canceled claim 6, that is "carbon having a specific surface area equal to or larger than 100 m²/g." The Office Action acknowledges that Yamada does not show that the specific surface area of the carbon is equal to or larger than 100 m²/g. As a result, for at least this reason, the rejection of independent claim 1 should be withdrawn. Because claims 2, 3, and 5 depend from claim 1, for at least the same reasons, the rejections of each of these claims should also be withdrawn.

Rejections Under 35 U.S.C. §103

Claim 4 stands rejected under 35 U.S.C. §103(a) as being unpatentable over Yamada in view of Ito (U.S. Patent No. 6,475,670). Claims 6-8 and 18 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Yamada. Claim 16 stands rejected under 35 U.S.C. §103(a) as being unpatentable over Yamada, in further view of Murofushi (U.S. Patent No. 7,157,788). Claim 17 stands rejected under 35 U.S.C. §103(a) as being unpatentable over Yamada, in further view of Yamakawa (U.S. Patent No. 6,656,633).

As discussed above, independent claim 1 has been amended to include the subject matter of canceled claim 6. With regard to claim 6, the Office Action states that it would have been

obvious for the electrode to have a specific surface area of the carbon being equal to or larger than $100 \text{ m}^2/\text{g}$, contending that where the general conditions of a claim are disclosed in the prior art, discovering optimum or workable ranges involves only routine skill in the art. Applicants respectfully traverse this rejection.

The Office Action appears to rely on common knowledge or "well known" prior art. MPEP 2144.03 states that "it would not be appropriate for the examiner to take official notice of facts without citing a prior art reference where the facts asserted to be well known are not capable of instant and unquestionable demonstration as being well-known." Applicants point out that the Office Action has not provided any evidence as to the general conditions of the claim as amended that are disclosed by the prior art. Instead, the Office Action has provided a broad sweeping statement assuming that the prior art does, in fact, disclose electrodes with carbon having a specific surface area of greater than or equal to $100 \text{ m}^2/\text{g}$. Applicants note that the specific surface area of carbon in the electrode is important in order to enhance the charge transfer speed on the electrode. Because none of the applied references teach or disclose electrodes with carbon having a specific surface area of greater than or equal to $100 \text{ m}^2/\text{g}$, Applicants respectfully request that the Examiner demonstrate on the record evidence showing that such electrodes were already known. As a result, the rejection of independent claim 1 should be withdrawn.

With respect to independent claim 18, the Office Action has similarly stated that where the general conditions of a claim are disclosed in the prior art, discovering optimum or workable ranges involves only routine skill in the art. Again, Applicants point out that the Office Action is relying on common knowledge or "well known" prior art. Applicants note that the particular range of metal weight percentages of carbon in the electrode is important in order to balance increasing the amount of carried metal and overall cost. Because none of the applied references teach or disclose electrodes wherein the amount of metal in the electrode ranges between 5 wt % and 15 wt% relative to carbon, Applicants respectfully request that the Examiner demonstrate on the record evidence showing that such electrodes were already known. As a result, the rejection of independent claim 18 should be withdrawn.

Further, Applicants argue the merits of dependent claim 17. The Office Action contends that it would have been obvious to combine the teachings of Yamada and Yamakawa to yield a binder that is insoluble to electrolytes. Applicants point out that Yamakawa discloses a polymer binder having a low solubility in an electrolyte solution (see col. 7, lines 62-65 of Yamakawa), not a polymer binder that is insoluble to electrolytes. As a result, even if the teachings of Yamada and Yamakawa could be combined, the Examiner still has yet to establish a prima facie case of obviousness for claim 17. Accordingly, withdrawal of the rejection of claim 17 is respectfully requested.

Because each of claims 4, 7, 8, and 16 depend from independent claim 1, for at least the same reasons, the rejections of each of these claims should also be withdrawn.

New Claims

Applicants have added new claims 19 and 20 that depend from independent claim 1. Claim 19 is directed to the binder in the electrode comprising more than 5 wt % of the carbon. Claim 20 is directed to an electrolytic layer disposed adjacent to the electrode and a semiconductor layer disposed adjacent to the electrolytic layer, and the electrolytic layer having a thickness of between about 1 micron and 100 microns. For at least the same reasons as stated above for independent claim 1, these claims should be in condition for allowance.

CONCLUSION

A Notice of Allowance is respectfully requested. The Examiner is requested to call the undersigned at the telephone number listed below if this communication does not place the case in condition for allowance.

If this response is not considered timely filed and if a request for an extension of time is otherwise absent, Applicant hereby requests any necessary extension of time. If there is a fee occasioned by this response, including an extension fee, the Director is hereby authorized to charge any deficiency or credit any overpayment in the fees filed, asserted to be filed or which should have been filed herewith to our Deposit Account No. 23/2825, under Docket No. S1459.70092US00.

Dated: June 9, 2009

Respectfully submitted,

By Randy J. Pritzker
Randy J. Pritzker
Registration No.: 35,986
Kuangshin Tai, Ph.D.
Registration No.: 62,733
WOLF, GREENFIELD & SACKS, P.C.
Federal Reserve Plaza
600 Atlantic Avenue
Boston, Massachusetts 02210-2206
617.646.8000